



Statens vegvesen



E39 Ålesund-Molde

incl. Kjerringsundet

Contracting strategy

Contracting strategy

- Internal process for contracting strategy for the project carried out in the NPRA. Participants from different regional units of NPRA Construction, and from Contracting Management
- It is the road section Ørskogfjellet-Molde with the connection to Gossen (Kjerringsundet) that has been reviewed. The remaining road sections further south will be handled when the planning basis is more complete.

Two different alternatives for dividing the project have been prepared, as well as a third option without Kjerringsundet. A mix of alternatives 1 and 2 is possible.

- Alternative 1, the project is divided into 16 construction contracts.
- Alternative 2, the project is divided into 6 construction contracts.
- Alternative 3, Kjerringsundet has been removed from the project.

The working group recommends Alternative 1 .

Input is requested from the industry on the outlined arrangements, both regarding division and contracting types.

	Contract division, Alternative 1	Contract type	Remuneration type	Contract cost (excl. VAT)	Construction time (completion time excl. engineering/design time, specified in Years)	Note
TE 01	Open-air road section at Ørskogfjellet (3-4km) and 1-2 km tunnel excavation in Vikakslatunnelen from Ørskogfjellet towards Vik. Length of tunnel excavation to be adapted to the need for rock material at Ørskogfjellet	EPC contract	Fixed sum/unit price.	NOK 0.4-0.6 bn		2 Single-tube tunnel
TE 02	Includes excavation and completion of approx. 7.5 km of Romsdalsfjordtunnelen, open-air road at Vik with two-level junction, as well as about 4 km of blasting in Vikakslatunnelen and completion of the entire tunnel.	EPC contract	Fixed sum/unit price.	NOK 2.5-3.5 bn		6 Twin-tube subsea tunnel
TE 03	Includes excavation and rock support in approx. 7.5 km of Romsdalsfjordtunnelen, open-air road section at Nautneset with large-scale rock works for entrance cutting, cuttings on county roads and anchoring for the suspension bridge.	EPC contract	Fixed sum/unit price.	NOK 2.5-3 bn		6 Twin-tube tunnel
UE 04	Julsundet Bridge concrete contract. Includes towers and viaducts	Design-bid-build contract	Unit price	NOK 1-1.5 bn		2
UE 05	Julsundet Bridge steel contract.	Design-bid-build contract	Unit price	NOK 2.5-3 bn		4
UE 06	Blasting and securing of all or parts of Julakslatunnelen, open-air road section at Julbøen with two-level junction and rock works for anchoring of suspension bridge.	Design-bid-build contract	Unit price	NOK 0.2-0.5 bn		1.5 Single-tube tunnel

Alt. 1, cont'd

UE 07	Excavation of Kringstadnakkunnelen and possibly part of Julakslatunnelen. Completion of both tunnels. Also, open-air road section at Mordalen and the junction area at Fuglset.	Design-bid-build contract	Unit price	NOK 1.2-1.6 bn	Single-tube tunnel
TE 08	Bridge across Kjerringsundet (Suspension / cable-stayed bridge)	EPC contract	Fixed sum/unit price.	NOK 0.9-1.2 bn	
TE 09	Bridge across Bollholmsundet. Cantilever bridge	EPC contract	Fixed sum/unit price.	NOK 0.6-0.8 bn	
UE 10	Road construction across Kjerringsundet strait and on Aukra	Design-bid-build contract	Unit price	NOK 0.2 bn	
TE 11	Electrical engineering, Romsdalsfjordtunnelen	EPC contract	Fixed sum/unit price.	NOK 0.5-0.7 bn.	
TE 12	Electrical engineering Julbøen – Molde (Julaakslatunnelen and Kringstadnakkunnelen)	EPC contract	Fixed sum/unit price.	NOK 0.2-0.3 bn	
TE 13	Electrical engineering Ørskogfjellet – Vik (Vikakslatunnelen)	EPC contract	Fixed sum/unit price.	NOK 0.1-0.2 bn	
TE 14	Control, regulation and monitoring of all tunnels (SRO)	EPC contract	Fixed sum/unit price.	NOK 0.05-0.1 bn	
UE 15	Preparation of lay-down areas, various preparatory works	Design-bid-build contract	Unit price	NOK 0.15-0.3 bn	Divided into multiple contracts
UE 16	Temporary factories, element factory, asphalt plant	Design-bid-build contract			Divided into multiple contracts



Gossen

Aukra

KJERRINGSUNDET BRU

BULLHOLMSUNDET BRU

Julbøen

Molde

E 39

Bolsønes

Nautneset

Otrøya

JULAKSLATUNNELEN

JULSUNDBRUA

ROMSDALSFJORDTUNNELEN

KRINGSTADNAKKTUNNELEN

Dryna

Vestnes

Vik

VIKAKSLA-TUNNELEN

E 39

Brattvåg

Ørskogfjellet

Vigra

Digernes

Ålesund

Breivika

Valle

E 39

Spjelkavik

Alternative 2

Alternativ 2 blir annerledes fra alternativ 1 i følgende punkter.

1. Entreprise 1 og entreprise 2 slås sammen.
2. Elektroentreprisen /SRO blir ikke skilt ut som egen entreprise, men det blir en del av hovedentreprisene.
3. Entrepriser 6 og 7 slås sammen. Fra Julbøen til Fuglset blir en entreprise.
4. Midlertidig fabrikk blir ikke skilt ut. Det blir en del av hovedentreprise.
5. De 10 riggområder blir ikke skilt ut. De blir en del av hovedentreprise.
6. Entreprise 04 og 05 sammenslås og blir totalentreprise.
7. Entreprise 08 og 10 sammenslås.

Inndeling i entreprise Alternativ 2	Geografisk inndeling															
	E39				Kjerringsundet						E39					
	Ørskogfjel.	Ørskogfjel. - Vik	Vik	Vik - Nautneset	Nautneset - Sundsboen	Sundsboen - Bollhomen	Bollhoms- undet	Forholmen- Kjerringhomen	Kjerringsundet	Aukratangen - Gossen	Nautneset - Julboen	Julboen	Julboen - Mordalen	Mordalen - Fuglset	Fuglset	
	Dagsone	Tunnel	Dagsone	Undersjøisk Tunnel	Dagsone	Sjøfylling	Bru	Sjøfylling	Bru	Dagsone	Bru	Dagsone	Tunnel	Dagsone	Tunnel	Dagsone
Prosjektering / konkurransesgrunnlag	Statens vegvesen og Rådgiver															
Bru, Sjøfylling, Forberedende arbeid, Elektro og SRO	TE-01				TE-02			TE-06	TE-02	TE-05		TE-03	UE-04			
Totalentreprise (TE)																
Utførelsesentreprise (UE)																

Alternative 2

Contract	Contract division, Alternative 2	Contract type	Remuneration type	Contract cost (excl. VAT)	Construction time (completion time excl. engineering/design time, specified in Years)	Note
TE 01	Open-air road section at Ørskogfjellet (3-4km), Excavation and completion of approx. 7.5 km of Romsdalsfjordtunnelen, open-air road section at Vik with two-level junction.	EPC contract	Fixed sum/unit price.	NOK 3.7-4.8 bn.	6	Single-tube tunnel on land and twin-tube tunnel in the sea
TE 02	Includes excavation and rock support in approx. 7.5 km of Romsdalsfjordtunnelen, open-air road section at Nautneset with large-scale rock works for entrance cutting, cuttings on county roads and anchoring for the suspension bridge, as well as the county road to Kjerringsundet.	EPC contract	Fixed sum/unit price.	NOK 3-3.5 bn.	6	Twin-tube tunnel
TE 03	Julsundet Bridge concrete contract + steel contract	EPC contract	Fixed sum/unit price.	NOK 3.5-4.5 bn.	6	
UE 04	Tunnels and open-air road from Julbøen to Molde	Design-bid-build contract	Unit price	NOK 2-2.5 bn.	4	Single-tube tunnel
TE 05	Bridge across Kjerringsundet strait and on Aukra	EPC contract	Fixed sum/unit price.	NOK 1.1-1.4 bn.	4	
TE 06	Bridge across Bollholmsundet. Cantilever bridge	EPC contract	Fixed sum/unit price.	NOK 0.6-0.8 bn.	2.5	

Other aspects

- EPC contracts are divided into packages with subtotals.
- The best price-quality ratios will be used as award criteria except for the very minor contracts.
- Rock protection and grouting will be based on unit prices.
- TBM as excavation method is considered of little relevance, partly because the material then will be crushed and becomes unsuitable for sea embankments. Also uncertainty regarding TBM due to possible leak-ins of potentially high pressure (subsea tunnel).
- Financing/cash flow may be decisive for progress
- Excess of good quality rock material
- Possible to involve the contractor early in the procurement phase, using competitive dialogue or tender competition with negotiation.